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ABSTRACT

This study examines the differences between students enrolling during the three phases of registration (early, regular, and late) in a two-year college. One purpose of the study was to suggest late registration policy and practices that might improve student success. Registration time, academic records, and demographic information were collected from a stratified random sample of students at one community college in the fall of 1998. Students were grouped according to type (new and returning) and registration time (early, regular, and late). Results indicated that: (1) for both new and returning students, late registrants were shown to be much less likely to persist to the spring semester than were early (returning students only) or regular registrants; (2) of the returning students, 80% of early, 64% of regular, and 42% of late registrants were retained to the next semester; (3) differences in withdrawal rates were significant for both new and returning students; (4) new students who registered on time (regular) withdrew from 10% of their course hours, while those who registered late withdrew from 21%; and (5) returning students differed significantly in their semester grade point average and their successful completion rate based on their time of registration. The report concludes that students should be encouraged to register during early and regular enrollment periods. (JA)

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THE EFFECTS OF EARLY, REGULAR. AND LATE REGISTRATION ON COMMUNITY COLLEGE STUDENT SUCCESS: A CASE STUDY

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Paper presented at the 43rd Annual Conference of the American Association of Community College's (AACC) Council for the Study of Community Colleges (CSCC) in Chicago, Illinois on April 7, 2001.

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ABSTRACT

This study had two purposes. The first purpose was to determine the differences between students enrolling during the three phases of registration (early, regular, and late) in a two-year college. The second purpose was to suggest late registration policy and practices that might improve student success.

Registration time, academic records, and demographic information were collected from a stratified random sample of students at one community college in the fall of 1998. Students were grouped according to type (new and returning) and registration time (early, regular, and late). The sample consisted of 86 new students (55 regular and 31 late registrants) and 165 returning students (55 from each phase of registration). Analysis of covariance and chi-square tests were used to analyze the data.

The major findings were as follows. For both new and returning students, late registrants were shown to be much less likely to persist to the spring semester than were early (returning students only) or regular registrants. Of the new students, 80% of regular and 35% of late registrants were retained to the next semester. For returning students, 80% of early, 64% of regular, and 42% of late registrants were retained. Differences in withdrawal rates were also significant for both new and returning students. New students who registered on time (regular) withdrew from 10% of their course hours while those who registered late withdrew from 21%. For returning students, early registrants withdrew from 5% of their course hours, regular registrants withdrew from 4%, and late registrants withdrew from 13%. Returning students also differed significantly in their semester grade point average (GPA) and their successful completion rate based on their time of registration.

There is a general feeling among community college faculty, counselors, and administrators that students who register late do not do as well in their classes and tend not to complete their coursework (Roueche & Roueche, 1994a; Sova, 1986). If this is indeed true, and at least three studies have shown that it is, then the late registration policies of institutions of higher education need to be reevaluated (Chilton, 1964; Neighbors, 1996; Parks, 1974).

There are two rationales for late registration in community colleges. The first is the underlying philosophy of ease of access as demonstrated by the open door policy stated above. The second stems from the fact that institutional state funding is based in part on enrollment. Any policy that increases the number of students enrolled is often viewed as a financial benefit to the college.

> Increased demands have been placed on those responsible for the registration process to make registration faster, easier, more accessible, and more convenient . . . . One by-product of this evolution has been a tendency to permit students to enroll in classes increasingly later into the term. Although allowing students to register late is a well intentioned effort to accommodate student needs, the question arises, is it in the best interest of the student? (Angelo, 1990, p. 316)

This study attempted to answer Angelo's question using the input-environment-outcome (I-E-O) assessment model of Astin (1993).

Conceptual Framework

"The I-E-O model is predicated on the assumption that the principal means by which assessment can be used to improve educational practice is by enlightening the educator about the comparative effectiveness of different educational policies and practices" (Astin, 1993, p. 37).

This fact, along with its simplicity, made the I-E-O model ideal for the study of the practice of early, regular, and late registration.

The I-E-O model consists of three components (Figure 1). Inputs refer to those personal qualities the student brings initially to the educational program; the environment refers to the student's actual experiences during the educational program; and outcomes refer to the talents developed in the educational program. The arrows in Figure 1 depict the relationships and directions of the relationships among the three sets of variables. "Assessment and evaluation in education are basically concerned with relationship B - the effects of environmental variables on outcome variables" (Astin, 1993, p. 18). However, in his own research, Astin discovered that student inputs must be taken into account in order to truly understand the relationship between environmental variables and various student outcomes. Student inputs can be related to both outputs (arrow C) and environments (arrow A); therefore, affecting the observed relationship between environments and outputs. "The basic purpose of the I-E-O design is to allow us to correct or adjust for such input differences in order to get a less biased estimate of the comparative effects of different environments on outputs" (Astin, 1993, p. 19).

Insert Figure 1 About Here

Statement of the Problem and Purposes

This was a study concerning the characteristics of early, regular, and late registration students and their success in a community college. The main problem addressed in the study was to determine whether or not early, regular, and late registration students differ from each other in terms of their academic success and retention.

The study had three purposes. The first purpose was to determine the differences between students enrolling during the three phases of registration (early, regular, and late) in two-year colleges. A second purpose was to suggest late registration policy and practices that might improve student success. The third purpose was to make research recommendations for further study in the area of student registrations.

Research Questions and Hypotheses

This study answered two research questions, each having four hypotheses. These questions and hypotheses refer to variables from each of the three categories mentioned in Astin's input-environment outcome (I-E-O) model for assessment in higher education. One input variable, one environmental variable, and four outcome variables are considered in each question. The first question dealt with new students and the second question dealt with returning students.

Research Question 1. Do semester grade point average, successful completion rate, withdrawal rate, and persistence (outcome variables) differ between new students according to time of registration after adjusting for age (input variable) and current number of hours taken (environmental variable)

H_{1A}: Semester grade point averages (GPAs) for the fall semester of 1998 do not differ by time of registration adjusting for age and current number of hours taken.

H_{1B}: Successful completion rates for the fall semester of 1998 do not differ by time of registration adjusting for age and current number of hours taken.

H_{1C}: Withdrawal rates for the fall semester of 1998 do not differ by time of registration adjusting for age and current number of hours taken.

H_{1D}: Persistence from the fall semester of 1998 to the spring semester of 1999 does not differ by time of registration.

Research Question 2. Do semester grade point average, successful completion rate, withdrawal rate, and persistence (outcome variables) differ between returning students according to time of registration after adjusting for prior cumulative grade point average (input variable) and current number of hours taken (environmental variable)?

H_{2A}: Semester grade point averages (GPAs) for the fall semester of 1998 do not differ by time of registration adjusting for cumulative GPA and current number of hours taken.

H_{2B}: Successful completion rates for the fall semester of 1998 do not differ by time of registration adjusting for cumulative GPA and current number of hours taken.

H_{2C}: Withdrawal rates for the fall semester of 1998 do not differ by time of registration adjusting for cumulative GPA and current number of hours taken.

Method

This section on methodology describes the: (a) general research design of the study, (b) sampling procedures, and (c) collection and analysis of data.

General Research Design

In this study, a causal-comparative design was used to investigate the effects of early, regular, and late registration on community college student success.

> The major advantage of causal-comparative research designs is that they allow us to study cause-and-effect relationships where experimental manipulation is difficult or impossible. The major disadvantage of causal-comparative research designs is that determining causal patterns with any degree of certainty is difficult. (Borg & Gall, 1989, pp. 539-540)

Two research questions, each having four hypotheses, were considered.

Sample

The population from which the sample was taken consisted of those students enrolled in on-campus credit classes at a west Texas community college for the fall semester of 1998. The college, a two-year community college, was located in a west Texas community with a population of approximately 100,000. The total enrollment (excluding continuing education) for the fall semester of 1998 was 4,593. Of these students, 3,950 were enrolled in on-campus classes and the remaining 643 were enrolled off-campus. Approximately 70% declared academic majors, while the remaining 30% were pursuing technical degrees. Females made up 57.8% of the student population. The ethnic breakdown was 60.5% White, 33.3% Hispanic, 4.4% Black, 1.0% Asian, 0.7% American Indian, and 0.1% alien. The average age of students was 24.7 years.

Registration for the fall semester of 1998 was conducted in three phases: five days of early registration (April 28-30 and May 20-21), three days of regular registration (August 24-26), and eight days of late registration (August 27-September 8). Approximately 37% (1,721 students) registered early, 51% (2,331 students) registered during regular registration, and 12% (537 students) registered late. Students who registered late were required to pay a fee of ten dollars. Classes began at 5:00 p.m. on August 26.

A stratified random sampling technique was used to insure that each group (early, regular, and late registrants) of students of each type (new and returning) was equally represented. The stratified random samples used in this study were obtained from the college's computerized student database using the random file generator of the mainframe's software (based on a random number generator). Using this procedure, 55 new regular registrants were

randomly selected from the student database. Only 31 new students registered late for on-campus credit classes so they were all used in the study. The same procedure was used to select 55 returning students from each phase of registration (early, regular, and late). Therefore, the sample consisted of 86 new students and 165 returning students for a total of 251 students.

Collection of Data

Data were requested and collected from the registrar's office at this west Texas community college for the students in the stratified random sample. Students were identified only by social security numbers. Each student's original registration form and final grade report were used to determine registration date, semester GPA, withdrawal rate, and successful completion rate. The college's computerized student database was used to collect demographic information for each student. Registration records for the spring semester of 1998 were used to determine retention status for each student. Table 1 describes the variables for which data were collected.

Insert Table 1 About Here

Categorical data collected for the study were coded for purposes of analysis. The categorical variables and their value ranges are presented in Table 2. The next section will detail the analysis of the data collected in the study

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Insert Table 2 About Here

Analysis of Data

The hypotheses under consideration in this study were tested for significance at the .05 level. The unit of measurement for each variable was the individual students of each type (new and returning) sampled from each phase of registration (early, regular, and late).

Analysis of covariance (ANCOVA) with multiple covariates was used to test hypotheses involving the continuous dependent variables: (a) semester GPA, (b) successful completion rate, and (c) withdrawal rate. For new students the covariates considered were age and current hours taken. For returning students, the covariates were cumulative GPA and current hours taken. The assumption of homogeneity of regression was checked using SPSS to calculate the beta values for the regression equations. For returning student data, Fisher's PLSD was used to determine which of the groups (early, regular, or late) differed significantly.

Chi-squared tests were used to test the hypotheses involving the categorical variable persistence. In order to use the chi-square test all expected frequencies must be one or greater, and at least 80% of the expected frequencies must be five or more. Expected values were computed to ensure these assumptions for the chi-square tests were met.

Successful completion rates (for H_{1B} and H_{2B}) were computed for each student by dividing the number of hours the student completed successfully (grade of A, B, or C) by the total hours of enrollment for that student during the fall of 1998. The mean of these successful completion rates was determined for each type of student group (new and returning) for each phase of registration (early, regular, and late). An analysis of covariance (ANCOVA) was used to determine if these means differed significantly after adjusting for input and environmental variables. Similarly, withdrawal rates (H_{1C} and H_{2C}) were computed for each student by dividing the number of hours for which the student received a grade of W by the total hours of

enrollment for that student during the fall of 1998. The mean of these withdrawal rates was computed for each type of student (new and returning) for each phase of registration (early, regular, and late) and an ANCOVA was used to determine if they differed significantly. For returning students, Fisher's PLSD (protected least significant difference) was used to determine which groups (early, regular, and late) differed. Hypotheses involving categorical data (persistence) were analyzed using chi-square tests.

Major Findings

Tables 3 and 4 provide a comparison of the dependent variables by registration time for new and returning students.

The major findings were as follows. For both new and returning students, late registrants were shown to be much less likely to persist than either early (returning students only) or regular registrants. Of the new students, 80% of regular and 35% of late registrants were retained to the next semester. For returning students, 80% of early, 64% of regular, and 42% of late registrants were retained. Differences in withdrawal rates were also significant for both new and returning students. New students who registered on time (regular) withdrew from 10% of their course hours while those who registered late withdrew from 21%. For returning students, early registrants withdrew from 5% of their course hours, regular registrants withdrew from 4%, and late registrants withdrew from 13%.

Insert Table 3 About Here

Insert Table 4 About Here

Returning students also differed significantly in their semester grade point average (GPA) and their successful completion rate based on their time of registration. Early registrants earned a semester GPA of 3.48 and successfully completed 96% of their course hours. Regular registrants earned a GPA of 3.33 and successfully completed 91% of their course hours. Late registrants earned a GPA of 2.69 and successfully completed 74% of their course hours.

The four dependent variables considered in this study were semester grade point average, successful completion rate, withdrawal rate, and persistence. Table 5 summarizes the significant variables and their p-values. For new students (research question one), persistence and withdrawal rate, proved to differ significantly at the .05 level. No significant differences were found in semester GPA or successful completion rate for new students based on registration time. For returning students (research question two), all four of the dependent variables differed significantly at the .05 level. Fisher's PLSD (protected least significant difference) test indicated that the late returning registrants differed from the other two groups (early and regular). No significant differences were found between early returning and regular returning registrants.

Insert Table 5 About Here

Implications for Practice

The second purpose of the study was to suggest late registration policy and practices that might improve student success. Based on the findings of this study, it would seem that late registration is a deterrent to students' academic success and retention. For new and returning late registrants, retention was significantly lower both within the semester (withdrawal rates) and from one semester to the next (persistence). Returning late registrants also had significantly lower academic success (measured by semester GPA and successful completion rate) than did early or regular returning registrants. New late registrants did not have significantly lower academic success than new regular registrants did. However, the average academic performance of all new students was lower than that of returning students.

This study found no significant differences between early and regular returning registrants in relation to any of the four dependent variables. This would seem to indicate that early registration provides no advantage over regular registration in terms of student success and retention. However, early registration can be of great benefit to students in other areas such as the scheduling of classes.

These findings would seem to indicate that early and regular registration should be continued and perhaps expanded, and late registration should be eliminated. However, further research is needed in order to determine whether some of the differences in outcome variables could be attributed to confounding variables other than the covariates used in this study. Other confounding variables might include major, type of courses taken (developmental vs. college level and academic vs. vocational), number of years since last attending school (high school or college), socio-economic level, ethnicity, number of hours worked per week, level of self-confidence, and motivation. Also, discontinuing late registration may not be feasible for many

community colleges. There are two rationales for late registration in community colleges. The first is the underlying philosophy of ease of access as demonstrated by the open door policy. The second stems from the fact that institutional state funding is based in part on enrollment (Angelo, 1990). Any policy that increases the number of students enrolled is of financial benefit to the college. However, accountability issues require that students are not only enrolled but that they also succeed and persist. Therefore, the following recommendations for policy and practices are presented:

1. Students should be encouraged to register during the early and regular enrollment periods. These registration times should be well advertised. Faculty should inform their students of early registration times. Admissions officers should make a special effort to inform high school counselors of the hazards of late registration.

2. The college should provide easy access to early and regular registration. This might be accomplished by instituting internet and touch-tone telephone registration.

3. Students on academic probation should be strongly discouraged from registering late. For those who do register late, special tutoring sessions should be required to assist them in catching up.

4. Flexible pay schedules for tuition and fees should be available for students who register on time. Some students may be putting off registration until payday in order to be able to make the initial payment or buy books. Allowing payment deferral until the 12th class day might encourage these students to register earlier.

5. Late registrants should be required to participate in group counseling sessions beginning the week after late registration concludes. Topics covered could include time management skills, organizational skills, productive study habits, and test taking skills.

These recommendations for policy and practices include incentives to register on time and assistance for late registrants. Implementation of these recommendations may help community colleges reduce possible negative effects of late registration on student success. The following section contains recommendations for further research pertaining to student success and time of registration.

Recommendations for Further Research

All research leads to new questions and this study is no exception. The following recommendations are made for future research.

1. In order to help identify solutions to the problems caused by late registration, qualitative and quantitative studies should be conducted to determine the reasons that students register late.

2. Qualitative and quantitative studies should be conducted to discover the reasons that some students consistently register early or on time. Methods to entice late registrants to register on time might be generated from these studies.

3. Conduct studies to determine whether advertising and incentive plans are effective deterrents to late registration.

4. This study did not distinguish between the type of courses taken. Studies should be conducted to determine the effects of late registration on student success in various subject areas (for example, hard sciences such as mathematics, physics, and chemistry compared to other academic subjects such as English, history and the social sciences).

5. Studies should be conducted to determine whether other confounding variables such as major, type of courses taken (developmental vs. college level and academic vs. vocational), number of years since last attending school (high school or college), socio-economic

level, ethnicity, number of hours worked per week, level of self-confidence, and motivation might account for some of the differences in student success and retention that were found in this study.

6. This study considered academic success variables for one semester and persistence only to the next semester. Longitudinal studies should be conducted that tracks students from each phase of registration over a longer period of time.

7. Studies should be conducted to determine whether support services such as aid in the development of productive study habits and organizational skills would help to offset the problems caused by late registration.

8. Studies should be conducted to examine the financial consequences of eliminating late registration.

Conclusions

Student success and retention are major areas of concern for all colleges. The Open Door policy and large numbers of under-prepared students magnify these problems for community colleges. The findings of this study contribute to the knowledge base concerning the possible impact of registration time on community college students' success and persistence.

The study found that registration time significantly affected students in terms of academic success and retention and led to the following conclusions:

1. Late registration practices seem to be detrimental to students in terms of academic success.

2. Late registration practices seem to hinder retention of students.

3. Registration conducted prior to the first day of class (both early and regular) seems to be a sound avenue for enrollment of students in terms of academic success and retention.

4. More research is needed in order to determine to what extent the lower academic achievement and retention of late registrants can be attributed to registration time rather than other possible confounding variables.

Colleges should provide every opportunity for students to succeed. The practice of late registration provides the initial access for students to participate in higher education but may reduce their chances for academic success and continued participation. Steps such as the policy and practices recommendations made in this study should be taken to reduce the possible negative impact of late registration.

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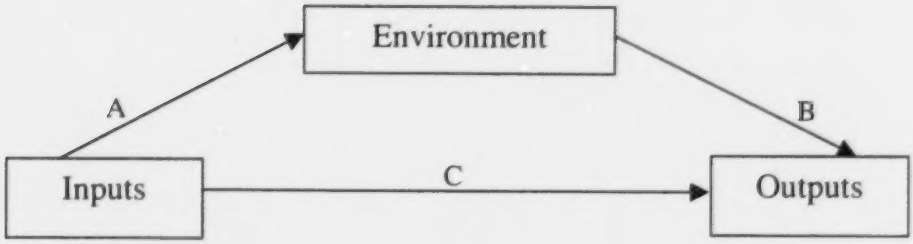

Figure 1: Astin's I-E-O Assessment Model

Table 1: Description of Variables

Data	Description
ID No.	Student social security number
Gender	Male or Female
Age	Age as of September 1, 1998
Ethnicity	White, Hispanic, Black, or Other
Cumulative GPA	Cumulative GPA prior to fall 1998 (all colleges)
Accumulated Hours	Hours taken prior to fall 1998 (all colleges)
Current Hours	Hours of enrollment for the fall 1998
Semester GPA	GPA for the fall semester of 1998
Hrs Successfully completed	Number of hours of A, B, or C (fall 1998)
Hours Withdrawn	Number of hours of W (fall 1998)
Persistence	Retained (re-enrolls for spring 1999) or not retained

Table 2: Coded Values for Categorical Variables

Variable	Values
Retention	1 = retained 2 = not retained
Registration Period	0 = early 1 = regular 2 = late
Type of Student	1 = new 2 = returning
Gender	1 = male 2 = female
Race	1 = White 2 = Black 3 = Hispanic 4 = Other

Table 3: Comparison of New Student Dependent Variables by Registration Time

Dependent Variable	Registration Time	Value
Semester GPA	Regular	2.53
	Late	2.40
Successful Completion	Regular	78%
	Late	68%
Withdrawal Rate	Regular	10%
	Late	21%
Persistence	Regular	80%
	Late	35%

Table 4: Comparison of Returning Student Dependent Variables by Registration Time

Dependent Variable	Registration Time	Value
Semester GPA	Early	3.48
	Regular	3.33
	Late	2.69
Successful Completion Rate	Early	96%
	Regular	91%
	Late	74%
Withdrawal Rate	Early	5%
	Regular	4%
	Late	13%
Persistence	Early	80%
	Regular	64%
	Late	42%

Table 5: Significant Variables Found by Testing the Hypotheses

Continuous Variable	F	P
Semester GPA	4.608	.011
Returning Students		
Successful Completion Rate		
Returning Students	6.293	.002
Withdrawal Rate		
New Students	7.037	.010
Returning Students	3.175	.044
Categorical Variable	χ^2	ρ
Persistence		
New Students	17.04250	.00004
Returning Students	17.10084	.00019